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THE HAWKWEEDS, OR PAINTBRUSHES

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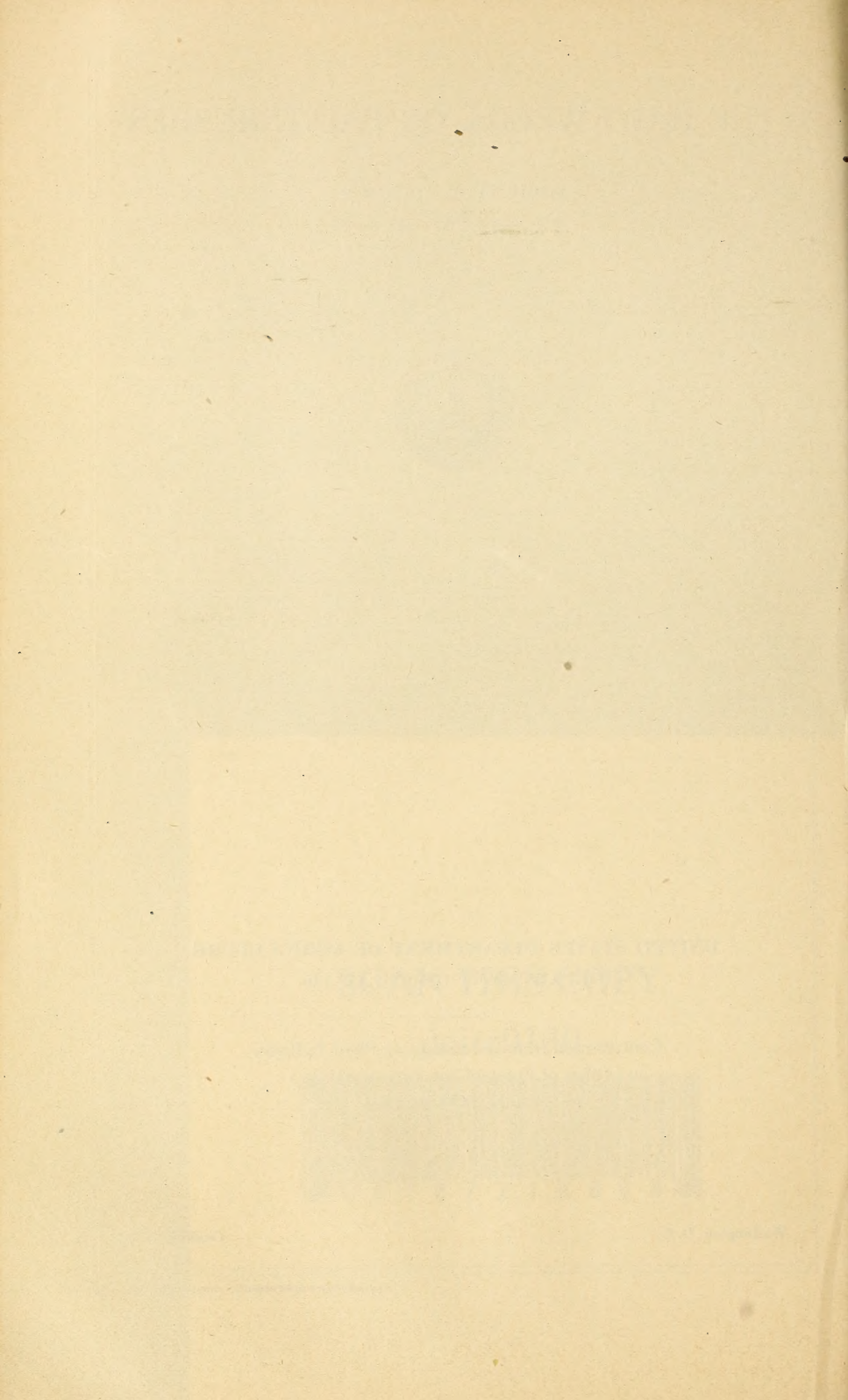


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DESCRIPTIONS.

There are a number of species of hawkweeds introduced into the United States that may be considered as weeds, three of which are noxious. The hawkweeds are usually most troublesome in pastures and hayfields and are found only occasionally on cultivated land. The three noxious species are the following:

ORANGE HAWKWEED.

Orange hawkweed¹ is also known as devil's-paintbrush, red daisy, flameweed, devil's-weed, and grim-the-collier (fig. 1). It was first introduced from Europe into New England because of its attractive flame-colored flowers. Originally a garden ornamental, the plant escaped its bounds and has established itself as one of the worst pasture and hayfield weeds of New England, New York, and Pennsylvania.

Orange hawkweed is recognized by its matted hairy leaves and handsome flowers, each about an inch in diameter and usually red on the margin, merging into an orange-colored center. The flowering branches, or shoots, grow from a few inches to 2 feet in height; they are leafless and covered with stiff black hairs. The plant becomes a perennial through its creeping aboveground and underground stems. It possesses two important means of reproduction: (1) The runners, forming new plants in a manner similar to strawberry runners (fig. 1, A), and (2) the seeds, which are wind distributed (fig. 1, B).

Orange hawkweed is a weed principally in permanent meadows and grasslands and is seldom troublesome in rich soil.

¹ *Hieracium aurantiacum*.



FIG. 1.—A, Orange hawkweed, or devil's-paintbrush (*Hieracium aurantiacum*). Note the runners, from which new plants arise. B, A single seed of orange hawkweed, showing the pappus (*p*), which enables the wind to carry the seed.

KING-DEVIL.

King-devil¹ is a noxious weed in northern New York, in New England, and in southern Canada. This species is also called yellow hawkweed, high hawkweed, and yellow paintbrush. It was introduced from Europe into northern New York about 1879, whence it spread rapidly northward. It differs from orange hawkweed (1) in size, being usually larger; (2) in the color of its flowers, which are about the same shade of yellow as buttercups; and (3) in having smooth, hairless stems. The plants are slender in appearance, growing up to 3 feet in height. King-devil possesses methods of reproduction similar to orange



FIG. 2.—Yellow field hawkweed (*Hieracium pratense*) growing in a Virginia pasture.

hawkweed, although the runners are shorter and thicker and usually below ground. The species is common in fields, pastures, and along roadsides and resembles orange hawkweed in that it rarely invades rich soils.

YELLOW FIELD HAWKWEED.

The yellow field hawkweed² (fig. 2) is also known as yellow devil, yellow paintbrush, and king-devil. It differs from the previous species in two important particulars: (1) It is noxious principally in the high-land sections of Virginia, West Virginia, and North Carolina, although it occurs from New England to Georgia; and (2) it is destructive in rich pasture lands and may even invade cultivated fields.

The yellow field hawkweed is a comparatively recent importation from Europe, but it has spread rapidly. The plant is a coarse, hairy

¹ *Hieracium florentinum*.

² *Hieracium pratense*.

perennial with matted basal leaves somewhat resembling those of buckhorn, from the center of which arises an upright leafless shoot covered with short black hairs surmounted by a number of yellow flowers, each about three-quarters of an inch in diameter. The flowers appear from early in June until late in September. The length of the stem varies from 2 to 24 inches, according to whether it has been grazed off or mown or allowed to grow undisturbed. As with both orange hawkweed and king-devil, the yellow hawkweed reproduces by seeds capable of being distributed by the wind. New plants are also formed on runners, in a manner similar to the king-devil, although the runners differ from those of orange hawkweed in being mainly below ground.

ERADICATION.¹

Where the hawkweeds occur on poor pasture lands, it is sometimes questionable whether the expense of eradication is justifiable, particularly since these weeds will frequently "run themselves out" in five to eight years.

It is often advisable to turn poor pasture land badly infested with hawkweeds into a farm wood lot, thereby deriving some revenue from the timber and avoiding the expense of eradication.

Where the land is sufficiently fertile to support a good stand of grass and it is desirable to eradicate the hawkweed, the methods described below are applicable.

DRY SALTING.

Dry salt scattered broadcast on infested land will tend to kill the hawkweeds. It should be applied during the late fall at the rate of not less than 2 tons per acre. Dry salt scattered broadcast on the matted growth will not only help to kill the hawkweed by its physical action, but will in addition attract cattle, which in turn damage the weeds by trampling and nibbling at the flowers and young shoots. The use of salt is advisable on badly infected areas only.

GRAZING.

Cattle and sheep reject hawkweeds because of their bitter taste. In the case of some species of these weeds the covering of stiff hairs acts as a repellent to grazing animals. Pasturing with goats, however, will keep the weeds in check.

HAND METHODS.

In case the hawkweeds occur in scattered patches of small size, the simplest mode of attack is to dig them out with a hoe, spade, spud, or mattock, preferably following the spring rains, when the ground is soft. Plants so removed should be carried away and either burned or placed in a refuse pile where they can do no harm. Care should be

¹ The eradication and control methods herein suggested are based in part on field experimental work performed in cooperation with the Virginia Agricultural Experiment Station at Blacksburg, Va.

exercised to see that all the below-ground growth is removed, since even a small piece if left in the soil may develop into a new plant. Such underground growth usually extends a distance of 8 inches beyond the aboveground limit of the patches. The exposed soil marking the spots where the hawkweed formerly grew should then be heavily seeded with the best grass mixture obtainable. Constant vigilance is needed thereafter in order to prevent the seeding of any hawkweed which may have been overlooked, since the seeds are blown by the wind and a single plant may be the means of infesting large areas. The inspection of the farm for stray patches of hawkweed is best done from horseback when the plants are in flower, since they are then most readily seen.

Another method of eradicating small scattered patches of hawkweeds is to cover them with tarred or some other type of heavy paper, to the complete exclusion of light. The paper should be pegged to the ground or weighted down with stones and should cover the patches for an entire season. This method is expensive when the number of patches to be treated is large, but complete eradication is practically certain if the infested areas are well covered.

CULTIVATION.

Where the area of infestation is large, the hawkweeds may be driven out by placing the land in intertilled crops, such as corn.

IMPROVING THE TURF.

Top-dressing with manure or commercial fertilizer will tend to produce a more luxuriant growth of grass, with which the hawkweeds will have less chance to compete successfully. Do not harrow such grasslands, since harrowing merely serves to spread the weed.

SPRAYING.

Spraying with a saturated salt solution and with other chemicals has been attempted, but dry salting is simpler and better; hence the use of sprays is not recommended. Spraying at best is a hard, tedious, and expensive procedure.

PRECAUTIONARY MEASURES.

In large areas of infestation where eradication methods are not attempted, the hawkweeds should be mowed twice a year at the time when the flower heads first appear, usually in June and August. The main purpose of mowing is to prevent the maturing of seeds, since seeds are readily scattered by the wind to adjacent fields.

Preventive measures are extremely important when hawkweed is first discovered. All plants found should be destroyed immediately and their location marked. Frequent inspection should be made thereafter in order to make sure that the weeds do not reappear.

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